## CLAIMS

1. A electrical motor having a shaft, said electrical motor comprising:

a motor housing having a pair of permanent magnets situated in opposed relation therein;

a rotor situated on said shaft between said pair of permanent magnets; said rotor comprising a plurality of windings situated thereon;

a commutator for passing current to said plurality of windings;

a printed circuit board comprising a circuit for controlling said motor; said printed circuit board being generally planar and lying in a first plane that bisects said axis to define at least one predetermined angle that is acute;

a pair of brushes situated in a brush housing in operative relationship with said commutator;

a pair of conductors coupling said pair of brushes to said printed circuit board; and

a plurality of terminals situated on said printed circuit board for coupling said circuit to a power source.

2. The electrical motor as recited in claim 1 wherein said at least one predetermined angle is less than 10 degrees.

3. The electrical motor as recited in claim 2 wherein said at least one predetermined angle is approximately 7 degrees.

4. The electrical motor as recited in claim 1 wherein said brush housing is situated remotely from said printed circuit board.

5. The electrical motor as recited in claim 1 wherein said shaft comprises a magnet situated thereon, said printed circuit board comprises a Hall sensor coupled to said circuit and mounted on said circuit board such that when said circuit board is mounted in operative relationship to said electrical motor, said Hall sensor is situated in operative relationship with said magnet in order to sense a speed of said shaft.

6. The electrical motor as recited in claim 3 wherein said shaft comprises a magnet situated thereon, said printed circuit board comprises a Hall sensor coupled to said circuit and mounted on said circuit board such that when said circuit board is mounted in operative relationship to said electrical motor, said Hall sensor is situated in operative relationship with said magnet in order to sense a speed of said shaft.

7. The electrical motor as recited in claim 4 wherein said shaft comprises a magnet situated thereon, said printed circuit board comprises a Hall sensor coupled to said circuit and mounted on said circuit board such that when said circuit board is mounted in operative relationship to said electrical motor, said Hall sensor is situated in operative relationship with said magnet in order to sense a speed of said shaft.

8. A drive unit comprising:

an electrical motor having a shaft having a first gear, said electrical motor comprising:

a motor housing having a pair of permanent magnets situated in opposed relation therein;

a rotor situated on said shaft between said pair of permanent magnets; said rotor comprising a plurality of windings situated thereon;

a commutator for passing current to said plurality of windings;

a printed circuit board comprising a circuit for controlling said electrical motor; said printed circuit board being generally planar;

a pair of brushes situated in a brush housing in operative relationship with said commutator;

a pair of conductors coupling said pair of brushes to said printed circuit board;

a plurality of terminals situated on said printed circuit board for coupling said printed circuit board to a power source;

a gear housing comprising a second gear rotatably mounted therein and situated in operative relationship to said first gear; and

said printed circuit lying in a first plane and being mounted between said motor housing and said gear housing such that said first plane bisects said axis at a predetermined angle.

9. The drive unit as recited in claim 1 wherein said predetermined angle is greater than zero but less than 10 degrees.

10. The drive unit as recited in claim 2 wherein said predetermined angle is approximately 7 degrees.

11. The drive unit as recited in claim 1 wherein said brushes are situated remotely from said printed circuit board.

12. The drive unit as recited in claim 1 wherein said shaft comprises a magnet situated thereon, said printed circuit board comprises a Hall sensor coupled to said circuit and mounted on said circuit board such that when said circuit board is mounted in operative relationship to said drive unit, said Hall sensor is situated in operative relationship with said magnet in order to sense a speed of said shaft.

13. The drive unit as recited in claim 1 wherein said brush housing further comprises a circuit board mounting area for receiving said circuit board such that when said brush housing is mounted on said motor housing, said circuit board is oriented at said predetermined angle.

14. The drive unit as recited in claim 13 wherein said predetermined angle is greater than zero but less than 10 degrees.

15. The drive unit as recited in claim 15 wherein said predetermined angle is approximately 7 degrees.

16. The drive unit as recited in claim 9 wherein said brushes are situated in said brush housing remotely from said printed circuit board.

17. The electrical motor as recited in claim 10 wherein said shaft comprises a magnet situated thereon, said printed circuit board comprises a Hall sensor coupled to said circuit and mounted on said circuit board such that when said circuit board is mounted in operative relationship to said electrical motor, said Hall sensor is situated in operative relationship with said magnet in order to sense a speed of said shaft.

18. The electrical motor as recited in claim 15 wherein said shaft comprises a magnet situated thereon, said printed circuit board comprises a Hall sensor coupled to said circuit and mounted on said circuit board such that when said circuit board is mounted in operative relationship to said electrical motor, said Hall sensor is situated in operative relationship with said magnet in order to sense a speed of said shaft.

19. The electrical motor as recited in claim 18 wherein said shaft comprises a magnet situated thereon, said printed circuit board comprises a Hall sensor coupled to said circuit and mounted on said circuit board such that when said circuit board is mounted in operative relationship to said electrical motor, said Hall sensor is situated in operative relationship with said magnet in order to sense a speed of said shaft.

20. A method for assembling an electrical motor having a shaft comprising an axis, a rotor having a plurality of windings, and a commutator for passing current to the windings, said method comprising the steps of:

providing a motor housing having a pair of permanent magnets situated in opposed relation therein;

situating said rotor between said pair of permanent magnets;

situating a printed circuit board in a first plane that bisects said axis to define a predetermined angle, said printed circuit board comprising a circuit and a plurality of terminals for coupling said circuit to a power source;

providing a pair of brushes in a brush housing in operative relationship with said commutator, but remote from said printed circuit board; and

coupling said pair of brushes to said printed circuit board.

21. The method as recited in claim 20 wherein said at least one predetermined angle is less than 10 degrees.

22. The method as recited in claim 21 wherein said at least one predetermined angle is approximately 7 degrees.

23. The method as recited in claim 20 wherein said brush housing is situated remotely from said printed circuit board.

24. The method as recited in claim 20 wherein said shaft comprises a magnet situated thereon, said printed circuit board comprises a Hall sensor coupled to said circuit and mounted on said circuit board such that when said circuit board is mounted in operative relationship to said electrical motor, said Hall sensor is situated in operative relationship with said magnet in order to sense a speed of said shaft.